CLAIMS

1. Method of transmitting data by means of acoustic waves between a transmitter device (2) and a receiver device (1) wherein:

said transmitter device (2) has a first electroacoustic transducer (26) for transmitting an acoustic carrier wave at at least one frequency and means for

5 modulating said acoustic carrier wave as a function of data to be transmitted,

said receiver device (1) has a second electroacoustic transducer (18) for receiving said acoustic carrier wave modulated by the transmitter device and means for demodulating said acoustic carrier wave and extracting the transmitted data therefrom, and

10 said first and second electroacoustic transducers (26, 18) each have a determined bandwidth and a determined frequency response characteristic,

which method is characterised in that the frequency of said acoustic carrier wave is varied during a determined time period to sweep a determined range of frequencies situated in the bandwidth common to said first and second electroacoustic

15 transducers (26, 18) so that the frequency of the transmitted acoustic carrier wave does not coincide at any time with a peak or a trough of the frequency response characteristic of said first or said second electroacoustic transducer.

2. Method according to claim 1, characterised in that said modulation means of the transmitter device are amplitude modulation means and in that the

20 frequency of said acoustic carrier wave is varied so that the envelope of this acoustic carrier wave remains substantially constant for a given modulation amplitude level.

3. Method according to claim 1 or claim 2, characterised in that the frequency of said acoustic carrier wave is varied in a substantially linear manner over said determined range of frequencies.

25 4. Method according to claim 1 or claim 2, characterised in that the frequency of said acoustic carrier wave is varied by means of a frequency modulation technique employing one or more modulating signals.

5. Method according to claim 4, characterised in that the frequency of said acoustic carrier wave is varied by means of a frequency modulation technique

30 employing two modulating signals and has the shape of the type defined by the following equation:

$$CARRIER(t) = \sin(2\pi \cdot f_0 \cdot t + \Delta 1/f1 \ \sin(2\pi \cdot f1 \cdot t) + \Delta 2/ f2 \ \sin(2\pi \cdot f2 \cdot t)) \quad (3)$$

35 In which CARRIER(t) is the expression for said acoustic carrier wave as a function of

time, f0 is the centre frequency of said acoustic carrier wave, f1 and $\Delta 1$ are respectively the frequency and the maximum deviation of the first modulating signal and f2 and $\Delta 2$ are respectively the frequency and the maximum deviation of the second modulating signal.

5   6.   Method according to claim 4 or claim 5, characterised in that said acoustic carrier wave is an acoustic wave that has a centre frequency of the order of 3000 Hz to 3500 Hz and is frequency modulated by said modulating signals.

7.   Method according to claim 4, characterised in that the data to be transmitted comprises a succession of bits transmitted by amplitude modulation of

10   said acoustic carrier wave between first and second determined amplitude levels and in that the parameters of frequency modulation of said acoustic carrier wave are selected so that the frequency spectrum of the acoustic carrier wave resulting from said frequency modulation covers substantially all of the band common to the transmitter and receiver devices.

15   8.   Method according to any one of the preceding claims, characterised in that said acoustic carrier wave is stored in said transmitter device in the form of a succession of samples stored in a table.

9.   System for transmitting data by means of acoustic waves for implementing the transmission method according to any one of the preceding claims,

20   which system is characterised in that it comprises:

  -    a data processing terminal (2) associated with at least one acoustic transmitter device (26) having a first electroacoustic transducer for transmitting said acoustic carrier wave, and

  -    at least one portable device (1) provided with an acoustic receiver device

25   (18) having a second electroacoustic transducer for receiving said acoustic carrier wave.

10.   System for transmitting data according to claim 9, wherein said acoustic carrier wave is stored in said data processing terminal (2) in the form of a succession of samples stored in a table and characterised in that said data processing terminal

30   comprises software means for:

  - consulting said table,

  - generating an acoustic carrier wave based on said succession of samples, and

  - modulating the acoustic carrier wave as a function of the data to be

35   transmitted.